

Alex Da Vera Cruz

Education

University of Central Florida <i>Bachelor of Science in Computer Science</i>	Expected May 2027 Orlando, Florida
<ul style="list-style-type: none">• Relevant Coursework: Data Structures & Algorithms, Linear Algebra, Calculus, Physics, OOP, Software Development, System Software, Computer Graphics, Operating Systems.	

Technical Skills

Programming Languages: C#, C++, C, Python, HLSL, GLSL, Java, Lua, Dart, JavaScript.
Tools & API's: .NET, MERN, LAMP, Flutter, Unity, Unreal Engine, Firebase, OpenGL, Jenkins.

Experience

Graphics Programming Knights LinkTree <i>Founder / President</i>	June 2025 – Present Orlando, Florida
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- Established UCF's first Computer Graphics Programming club, growing a community to over 130 members within 3 months by leading a team of five officers to organize technical workshops, industry events, and club collaborations.
- Developed workshops on topics like shaders, rendering techniques, C++ programming, and math for CG.

Limbitless Solutions <i>Assistant Scholar – Games Team</i>	August 2024 – Present Orlando, Florida
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- Developing three VR and MR therapeutic serious games in Unity, serving 50+ patients with disabilities.
- Collaborating with a multidisciplinary team of 16 to engineer and deliver three distinct therapeutic games, contributing to both core programming and systems architecture.
- Selected as an exhibitor for the alt.ctrl.GDC 2025 showcase at the Game Developers Conference in San Francisco for Limbitless Journey MR.

Computer Graphics Lab Repository <i>Undergraduate Research Assistant</i>	Jan 2025 – May 2025 Orlando, Florida
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- Conducting research under Sumanta Pattanaik at the University of Central Florida by comprehending and implementing technical research papers into code and visualizations.
- Applying physically based rendering, shader programming, and other Computer Graphics topics into project.

Projects

Hack-a-Raster C++, SDL3 Repository	
<ul style="list-style-type: none">• Built a CPU Rasterizer from scratch with vector/matrix math, indexed rendering, barycentric interpolation, depth testing, and perspective projection.• Built in raw C++, only relying on SDL3 for window handling and pixel drawing.	

Box and Block VR Unity, C#, OpenXR, Firebase, HLSL	
<ul style="list-style-type: none">• Developed a VR simulation of the Box and Block test for clinical participants, enabling data-driven therapy analysis.• Built a data collection system for researchers, an API for our team's custom EMG controllers, and custom shaders written in HLSL.• Engineered a reusable, service-agnostic Firebase plugin that decoupled data handling from specific projects, enabling streamlined cloud integration for all team applications and significantly reducing future development overhead.• Wrote and maintained detailed documentation, streamlining onboarding and development for new team members.	

Be4Real TypeScript, Node.js, Express.js, MongoDB, Jest, Zod, Jenkins Repository	
<ul style="list-style-type: none">• Developed RESTful API endpoints for post creation and feed retrieval using TypeScript, Express, and MongoDB, handling base64 image uploads and implementing cursor-based pagination for optimized load times.• Implemented JWT-based authentication and authorization middleware to secure user-specific endpoints, with comprehensive error handling and input validation using Zod schema validation.• Built MongoDB integration layer with ObjectId references and atomic updates for data consistency, supporting relational data between users and posts.	